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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/721,326

11/22/2000

Michael J. Barrett

A0602/7002

7238

7590

10/20/2004

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EXAMINER

LOGSDON, JOSEPH B

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/721,326

Applicant(s)

BARRETT ET AL.

Examiner

Joe Logsdon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8,10,13-22,24,27-31,35,40-47,49-61,63-86 and 88-150 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8,10,13-22,24,27-31,35,40-47,49-61,63-86 and 88-150 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**Withdrawal of Finality:**

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

**Claim Rejections—35 U.S.C. 103(a):**

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2, 15-17, 19-22, 24, 29-31, 35, 68, 98, and 147-150 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon et al.

With regard to claims 1, 2, 15, 30, 68, 84, 86, and 98, Simon et al. discloses a system and method for providing information to at least one destination in an area where signal coverage is not available from an information source (abstract). The destination can be part of a passenger vehicle because the invention can enable information transmission between aircraft (column 2, lines 51-58). The invention inherently creates a communication network because the invention allows communication between source and destination to proceed in situations in which such communication would otherwise not be possible. The relay systems are carried on passenger vehicles ("aerodynes") (abstract). Each passenger vehicle (aerodyne) comprises a transceiver (column 2, lines 48-50). The information carrying signal is inherently received by a first movable receiver/transmitter unit within a signal coverage area of the information source, and the information signal is inherently re-transmitted by the first movable receiver/transmitter to its destination because an information source ("emitting station") transmits the signal, and the information carried by the signal is transmitted from one relay system to another relay system up to its destination (abstract). The destination inherently includes a receiver because it is a "receiving station" (abstract). Relay systems are carried on passenger vehicles ("aerodynes") (abstract). Each passenger vehicle (aerodyne) comprises a transceiver (column 2, lines 48-50). The information carrying signal is inherently received by a movable receiver/transmitter unit within a signal coverage area of the information source, the information signal is inherently re-transmitted by a movable receiver/transmitter to its destination, and the information source

inherently includes a transmitter because an information source (“emitting station”) transmits the signal, and the information carried by the signal is transmitted from one relay system to another relay system up to its destination (abstract). The destination inherently includes a receiver because it is a “receiving station” (abstract). Simon et al. teaches that the method could be extended to use radar, which is a directional antenna (column 5, lines 32-35). Simon et al. discloses a system and method for providing information to passenger vehicles along a signal pathway (i.e., the path traversed by the signal as it propagates from source, to passenger vehicle to passenger vehicle, to destination) (abstract). Relay systems are carried on passenger vehicles (“aerodynes”) (abstract). Each passenger vehicle (aerodyne) comprises a transceiver (column 2, lines 48-50). The destination can be part of a passenger vehicle because the invention can enable information transmission between aircraft (column 2, lines 51-58). The information carrying signal is inherently received by a first movable receiver/transmitter unit, and the information signal is inherently re-transmitted by the first movable receiver/transmitter to another passenger vehicle because an information source (“emitting station”) transmits the signal, and the information carried by the signal is transmitted from one relay system to another relay system up to its destination, which can also be a passenger vehicle (abstract; column 2, lines 51-58). The destination inherently includes a receiver because it is a “receiving station” (abstract).

Simon et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least

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one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger.

Examiner takes Official Notice that it has been common practice in the art to alter one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; store data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal

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retransmitted from the first passenger vehicle do not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it teaches altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle do not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for providing a

system that is responsive to current conditions; fault tolerant; secure; and capable of serving several users simultaneously.

With regard to claim 16, the transceiver onboard each aerodyne in Simon et al. is inherently located in an area where there is an already existing communication channel because the transceiver communicates. According to the most general definition of channel, a channel is simply a path along which a signal can be sent. If no such channel existed in the area of the transceiver onboard an aerodyne, the aerodyne would therefore be unable to communicate.

With regard to claim 17, Simon et al. teaches that there can be more than one relay system-equipped aerodyne involved in the communication from source to destination (Fig. 1; column 2, lines 38-41; column 2, lines 59-64).

With regard to claim 19, Simon et al. teaches that the passenger vehicles are aircraft (“aerodynes”) (abstract).

With regard to claims 20-22 and 24, Simon et al. teaches that the positions and directions of motion of the passenger vehicles can change in an almost random manner from one instant to another (column 2, lines 42-47). The passenger vehicles can therefore be located on the same pathway or a parallel pathway or an intersecting pathway, and can travel in the same or opposite directions or to or from the intersections of their pathways regardless of their relative locations or pathways.

With regard to claims 29, each aerodyne in Simon et al. is inherently both a pathway station and a pathway control station because each aerodyne monitors the passenger vehicles (other aerodynes) along a pathway because aerodynes can link up with each other momentarily to pass information in the form of data packets between each other when necessary (column 1,



line 64 to column 5, line 5); each aerodyne is inherently coupled to itself; each aerodyne is inherently coupled to an existing packet-based data network because it forwards received data packets to other aerodynes or to the destination (column 1, lines 50-55; column 64 to column 2, line 5); and each aerodyne inherently controls communication between itself and the existing packet-based data network because each aerodyne is part of the existing packet-based data network (column 1, lines 50-55; column 64 to column 2, line 5).

With regard to claims 31 and 35, Simon et al. teaches that the positions and directions of motion of the passenger vehicles can change in an almost random manner from one instant to another (column 2, lines 42-47). The passenger vehicles can therefore be located on the same pathway or a parallel pathway or an intersecting pathway, and can travel in the same or opposite directions or to or from the intersections of their pathways regardless of their relative locations or pathways.

With regard to claim 147, Simon et al. fails to teach that the first and second passenger vehicles are located on a pathway, and that the step of retransmitting the information signal with the first transceiver unit includes retransmitting the information signal along the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the first and second passenger vehicles are located on a pathway, and that the step of retransmitting the information signal with the first transceiver unit includes retransmitting the information signal along the pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the signal to be retransmitted along the pathway.

With regard to claim 148, Simon et al. fails to teach that the first and second passenger vehicles are located on a pathway, and that the step of retransmitting the information signal with the transmitter includes retransmitting the information signal along the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the first and second passenger vehicles are located on a pathway, and that the step of retransmitting the information signal with the first transceiver unit includes retransmitting the information signal along the pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the signal to be retransmitted along the pathway.

With regard to claim 149, Simon et al. fails to teach that the first passenger vehicle is located on a first predetermined, vehicular pathway, and that the second passenger vehicle is located on a second predetermined vehicular pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it teaches that the first passenger vehicle is located on a first predetermined, vehicular pathway, and that the second passenger vehicle is located on a second predetermined vehicular pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the passenger vehicles to travel along different pathways.

With regard to claim 150, Simon et al. fails to teach that the first passenger vehicle is located on a first predetermined, vehicular pathway, and that the second passenger vehicle is located on a second predetermined vehicular pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary

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skill in the art to modify the invention of Simon et al. so that it teaches that the first passenger vehicle is located on a first predetermined, vehicular pathway, and that the second passenger vehicle is located on a second predetermined vehicular pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the passenger vehicles to travel along different pathways.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. Wilson et al. teaches a method of providing information to at least one passenger vehicle (Subscriber Unit 202 in Fig. 2) located on a pathway in an area where signal coverage is not available from an information source (column 1, line 47 to column 2, line 8), to create an information network, wherein the method comprises the step of transmitting an information signal containing the information with a transmitter located at the information source (Fixed Infrastructure 101 in Fig. 2). The method further comprises the step of receiving the information with a first transmitter/receiver unit located on a passenger vehicle (mobile repeater) that is within a signal coverage area of the information source and that is located on the pathway (column 1, line 47 to column 2, line 8). The signal is then retransmitted with the first transmitter/receiver unit to a receiver located on the at least one passenger vehicle located on the pathway (column 1, line 47 to column 2, line 8). The signal is transmitted from the first transmitter/receiver unit to the receiver along the pathway (column 1, line 47 to column 2, line 8). Wilson et al. fails to teach the altering of one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver. Examiner takes Official Notice that it has been common practice in the art to alter one of a direction of travel and

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velocity of the second passenger vehicle in response to information received by the receiver. It would have been obvious to one of ordinary skill in the art to modify the invention of Wilson et al. so that it teaches the altering of one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver because Examiner takes Official Notice that such an arrangement has been well known in the art as a means to enable the system to respond to current conditions.

6. Claims 1, 2, 15, 30, and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen et al.

With regard to claims 1, 15, 30, and 68, Larsen et al. teaches a method of providing information to at least one passenger vehicle (a mobile station) located on a pathway in an area where signal coverage is not available from an information source (a mobile station), to create an information network, the method comprising steps of:

transmitting an information signal containing the information with a transmitter located at the information source (column 7, lines 21-34; Figs. 7a-7c; 6→5);

receiving the information signal with a first transmitter/receiver unit located on a passenger vehicle (a repeater located on a mobile station) that is within a signal coverage area of the information source and that is located on the pathway (column 7, lines 21-34; Figs. 7a-7c; 5→4); and

re-transmitting the information signal with the first transmitter/receiver unit (mobile repeater) to a receiver located on the at least one passenger vehicle (mobile user) located

on the pathway (column 7, lines 21-34; Figs. 7a-7c; column 7, lines 56-58; the system could use any number of hops);

wherein the information signal is transmitted from the first transmitter/receiver unit to the receiver along the pathway (column 7, lines 21-34; column 7, lines 56-58; Figs. 7a-7c; all antennae are inherently directional antennae).

Larsen et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. Examiner takes Official Notice that it has been common practice in the art to alter one of a direction of travel and velocity of the second passenger vehicle in response to information

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received by the receiver; store data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it teaches altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the

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step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for designing the system so that it is responsive to current conditions; fault tolerant; secure; and capable of serving several users simultaneously.

With regard to claim 2, Larsen et al. teaches a method of providing information from at least one passenger vehicle (a mobile station) located on a pathway and not within a signal coverage area of a destination (base station), the method comprising steps of:

transmitting an information signal containing the information with a transmitter (a mouth) located on the at least one passenger vehicle on the pathway (column 7, lines 21-34; Figs. 7a-7c; 6→5);

receiving the information signal with a first transmitter/receiver unit located on a passenger vehicle (mobile phone), located on the pathway, that is within the signal coverage area of the destination (column 7, lines 21-34; Figs. 7a-7c; 5→4);

and re-transmitting the information signal with the first transmitter/receiver unit to a receiver located at the destination (base station) (column 7, lines 21-34; Figs. 7a-7c; 4→a);

wherein the information signal is transmitted from the transmitter to the first transmitter/receiver unit along the pathway (column 7, lines 21-34; Figs. 7a-7c).

7. Claims 1-8, 10, 13-22, 24, 29-31, 40-47, 50, 52, 57, 58, and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steele.

With regard to claims 1-8, 10, 13, 15-17, 29-31, 35, 40-45, 50, 57, and 58, Steele discloses a method and system for allowing a mobile station (hidden mobile station (HMS)) and a fixed site base station (information source), which are out of range of direct communication, to communicate by using other mobile stations (DMS) as repeaters. The location of each mobile station is estimated. This process can involve several mobile stations, any number of which may be hidden. A pathway station (SC) monitors the mobile stations. (See page 18, line 9 to page 21, line 19; Fig. 5; Fig. 6; Fig. 7.) The antennas used in Steele are inherently directional antennas because all antennas, whether unidirectional, omni-directional, or multidirectional, are directional. Steele fails to teach that the mobile stations are on passenger vehicles. Steele, however, teaches that all of the mobile stations can have various velocities (so they can travel in any direction at any speed) and accelerations and can be fixed (Fig. 7). Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Steele so that the mobile stations are on passenger vehicles because such an arrangement would enable the users of the mobile stations to



perform tasks other than communication, such as traveling from one point to another. Steele et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would have been obvious to one of ordinary skill in the art to modify the invention of Steele et al. so that it teaches altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein

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the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger because Examiner takes Official Notice that such an arrangement has been well known in the art as a system that is responsive to current conditions; fault tolerant; secure; and capable of serving several users simultaneously.

With regard to claim 14, Steele fails to teach a supplemental communication system being provided when an HMS cannot communicate with the fixed base station. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Steele so that a supplemental communication system is provided when the HMS cannot communicate with the fixed base station because Examiner takes Official Notice that has been well known as an arrangement would enable the HMS to communicate with the fixed base station.

With regard to claims 18 and 19, Steele fails to teach that the mobile stations are mounted on either ground vehicles or aircraft. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to

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modify the invention of Steele so that the mobile stations are mounted on either ground vehicles or aircraft because Examiner takes Official Notice that such an arrangement has been well known in the art as an arrangement that would enable the invention to be used for either ground vehicles or aircraft.

With regard to claims 20-22, 24, 31, and 35, Steele teaches that the mobile stations are traveling either in the same direction or in opposite directions or that they are either on parallel or intersecting pathways (Fig. 7).

With regard to claim 46, Steele fails to teach that the heading of the second passenger vehicle is altered in response to the information it receives. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Steele so that the heading of the second passenger vehicle is altered in response to the information it receives because Examiner takes Official Notice that such an arrangement has been well known in the art as an arrangement that would enable hidden mobile stations to navigate their way until they are no longer hidden.

With regard to claims 47, 52, and 60, Steele fails to teach that the information is digitally encoded. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching of Steele so that the information is digitally encoded because Examiner takes Official Notice that it has been well known that digital encoding offers several benefits such as noise immunity.

8. Claims 18 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon et al. in view of Rootsey et al.

With regard to claim 18, Simon et al. fails to teach that the passenger vehicles can be ground vehicles. Rootsey et al. teaches that the passenger vehicles can be trains (abstract). Trains are ground vehicles. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the passenger vehicles are ground vehicles, as in Rootsey et al. because such an arrangement would allow the passenger vehicles to be easily accessed for maintenance.

With regard to claim 28, Simon et al. fails to teach that a supplemental network communicates directly with a passenger vehicle that is located in an area where there are insufficient passenger vehicles available to provide a signal to the passenger vehicle. Rootsey et al. teaches that where supplemental networks exist, i.e., in populated areas with licensed terrestrial broadcasters, the repeater onboard the passenger vehicle (“vehicle”) is shut down (abstract). Because it is shut down, the passenger vehicle is “unavailable” in the sense that it does not provide its service to passenger vehicles located in areas with supplemental networks. This suggests the converse, i.e., this suggests an arrangement in which supplemental networks provide the same service when movable repeaters are unavailable. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that a supplemental network communicates directly with a passenger vehicle that is located in an area where there are insufficient passenger vehicles available to provide a signal to the passenger vehicle, as suggested by Rootsey et al., because such an arrangement would ensure that a communication path always exists.

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9. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simon et al. in view of Drummer.

With regard to claim 27, Simon et al. fails to teach that at least one of the passenger vehicles is not located on a pathway. Drummer teaches satellites, which are inherently not located along the pathway of a missile; this must be so, for otherwise the missile would destroy the satellite (Fig. 1). It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that at least one of the passenger vehicles is not located on a pathway, as in Drummer, because such an arrangement would help ensure that collisions between passenger vehicles do not occur.

10. Claims 3-8, 10, 13-14, 40-47, 49-61, 63-67, 69-86, 88, 89, 90-97, and 99-146 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon et al.

With regard to claims 90 and 92, Simon et al. discloses a system and method for providing information to at least one destination in an area where signal coverage is not available from an information source (abstract). The destination can be part of a passenger vehicle because the invention can enable information transmission between aircraft (column 2, lines 51-58). The invention inherently creates a communication network because the invention allows communication between source and destination to proceed in situations in which such communication would otherwise not be possible. The relay systems are carried on passenger vehicles ("aerodynes") (abstract). Each passenger vehicle (aerodyne) comprises a transceiver (column 2, lines 48-50). The information carrying signal is inherently received by a first movable receiver/transmitter unit within a signal coverage area of the information source, and the

information signal is inherently re-transmitted by the first movable receiver/transmitter to its destination because an information source (“emitting station”) transmits the signal, and the information carried by the signal is transmitted from one relay system to another relay system up to its destination (abstract). The destination inherently includes a receiver because it is a “receiving station” (abstract). Relay systems are carried on passenger vehicles (“aerodynes”) (abstract). Each passenger vehicle (aerodyne) comprises a transceiver (column 2, lines 48-50). The information carrying signal is inherently received by a movable receiver/transmitter unit within a signal coverage area of the information source, the information signal is inherently re-transmitted by a movable receiver/transmitter to its destination, and the information source inherently includes a transmitter because an information source (“emitting station”) transmits the signal, and the information carried by the signal is transmitted from one relay system to another relay system up to its destination (abstract). The destination inherently includes a receiver because it is a “receiving station” (abstract). The information is inherently accessible to passengers on each passenger vehicle because each passenger vehicle comprises a transceiver. Simon et al. teaches that the method could be extended to use radar, which is a directional antenna (column 5, lines 32-35). Simon et al. discloses a system and method for providing information to passenger vehicles along a signal pathway (i.e., the path traversed by the signal as it propagates from source, to passenger vehicle to passenger vehicle, to destination) (abstract). Relay systems are carried on passenger vehicles (“aerodynes”) (abstract). Each passenger vehicle (aerodyne) comprises a transceiver (column 2, lines 48-50). The destination can be part of a passenger vehicle because the invention can enable information transmission between aircraft (column 2, lines 51-58). The information carrying signal is inherently received by a first movable

receiver/transmitter unit, and the information signal is inherently re-transmitted by the first movable receiver/transmitter to another passenger vehicle because an information source (“emitting station”) transmits the signal, and the information carried by the signal is transmitted from one relay system to another relay system up to its destination, which can also be a passenger vehicle (abstract; column 2, lines 51-58). The destination inherently includes a receiver because it is a “receiving station” (abstract). All antennae are inherently directional antennae. Simon et al. fails to teach that the information is provided for access by a passenger associated with the second passenger vehicle. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the information is provided for access by a passenger associated with the second passenger vehicle because a passenger in the second passenger vehicle may desire to have access to the information. Simon et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal

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retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it teaches altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger because Examiner takes Official Notice that such an arrangement has been well known in the art as a system that would be



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responsive to current conditions; fault tolerant; secure; and capable of serving several users simultaneously.

With regard to claim 3, Simon et al. fails to teach repeating the steps of receiving and re-transmitting the information signal along the pathway with an additional transceiver. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the steps of receiving and re-transmitting the information signal along the pathway with an additional transceiver are repeated because Examiner takes Official Notice that such an arrangement has been well known in the art as an arrangement that would enable the signal to traverse a greater distance.

With regard to claim 4, Simon et al. fails to teach that the additional transceiver is located on a fixed platform. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the additional transceiver is located on a fixed platform because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the invention to work when some of the platforms are fixed.

With regard to claim 5, Simon et al. fails to teach that the additional transceiver is located on another passenger vehicle located on the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the additional transceiver is located on another passenger vehicle located on the pathway because Examiner takes Official Notice that

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such an arrangement is an arrangement that would enable the signal to traverse a greater distance along the pathway.

With regard to claim 6, Simon et al. fails to teach that at least two of the passenger vehicles are located on the pathway and are traveling in the same direction. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that at least two of the passenger vehicles are located on the pathway and are traveling in the same direction because Examiner takes Official Notice that such an arrangement has been well known in the art as an arrangement that would enable the signal to traverse a longer distance along the pathway.

With regard to claim 7, Simon et al. fails to teach that at least two of the passenger vehicles are located on the pathway and are traveling in opposite directions. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that at least two of the passenger vehicles are located on the pathway and are traveling in opposite directions because such an arrangement has been well known in the art as a means for enabling the invention to function when the vehicles are traveling in opposite directions.

With regard to claim 8, Simon et al. fails to teach that the additional transceiver is located on another passenger vehicle that is located on a parallel pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the additional transceiver is located on another passenger vehicle that is located on a parallel pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a

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means for enabling the invention to work when the vehicles are on different, but parallel, pathways.

With regard to claim 10, Simon et al. fails to teach that the additional transceiver is located on another passenger vehicle located on a second pathway that intersects the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the additional transceiver is located on another passenger vehicle located on a second pathway that intersects the pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the invention to work when the vehicles are on different, but intersecting, pathways.

With regard to claims 13 and 94, Simon et al. fails to teach the step of monitoring the passenger vehicles and information signals along the pathway with a pathway station. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes the step of monitoring the passenger vehicles and information signals along the pathway with a pathway station because Examiner takes Official Notice that such an arrangement has been a well known means for enabling the system to provide centralized control over the passenger vehicles.

With regard to claim 14, Simon et al. fails to teach the step of providing the information signal to the at least one passenger vehicle located in an area where there is an insufficient number of available passenger vehicles to provide the information signal, with a supplemental communication system. Examiner takes Official Notice that such an arrangement has been well

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known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes the step of providing the information signal to the at least one passenger vehicle located, in an area where there is an insufficient number of available passenger vehicles to provide the information signal, with a supplemental communication system because Examiner takes Official Notice that such an arrangement has been a well known means for enabling the system to provide information signals to passenger vehicles that are otherwise unreachable.

With regard to claim 72, Simon et al. teaches that the passenger vehicles are aircraft (aerodynes; abstract).

With regard to claim 70, Simon et al. fails to teach that at least two of the passenger vehicles are located on parallel pathways. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that at least two of the passenger vehicles are located on parallel pathways because Examiner takes Official Notice that such an arrangement has been well known as a means for extending the communication capability so that passenger vehicles that are traveling on different pathways can communicate.

With regard to claim 71, Simon et al. fails to teach that the another passenger vehicle is located on a second pathway that intersects the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the another passenger vehicle is located on a second pathway that intersects the pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for extending

the communication capability so that passenger vehicles that are traveling on different pathways can communicate.

With regard to claim 40, Simon et al. fails to teach the step of re-transmitting the information signal along the first predetermined pathway to the third passenger vehicle that is located on the first predetermined pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes the step of re-transmitting the information signal along the first predetermined pathway to the third passenger vehicle that is located on the first predetermined pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the information signal to be sent along a pathway.

With regard to claim 41, Simon et al. fails to teach the step of re-transmitting the information signal along the first predetermined pathway using a directional antenna coupled to the first transceiver. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes the step of re-transmitting the information signal along the first predetermined pathway using a directional antenna coupled to the first transceiver because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the transmission path of the information signal to be determined.

With regard to claims 56, 61, 87, 97, and 103, Simon et al. fails to teach that the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle, wherein the step

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of re-transmitting the information signal does not include the step of re-transmitting the first portion of information. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle, wherein the step of re-transmitting the information signal does not include the step of re-transmitting the first portion of information because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the passenger vehicles to merely act as routers; each portion of information could comprise the address of its respective passenger vehicle.

With regard to claim 49, Simon et al. fails to teach a step of providing the information in the information signal for access by a passenger associated with the at least one passenger vehicle. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes a step of providing the information in the information signal for access by a passenger associated with the at least one passenger vehicle because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling passengers to benefit from the invention.

With regard to claims 51, 62, 93, and 111, Simon et al. fails to teach the step of re-transmitting the information signal with a multibeam antenna in a plurality of directions, at least one of the directions being along the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill

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in the art to modify the invention of Simon et al. so that it includes the step of re-transmitting the information signal with a multibeam antenna in a plurality of directions, at least one of the directions being along the pathway because Examiner takes Official Notice that such an arrangement has been well known in the art. As a means for enabling conference calls by allowing the information signal to travel in multiple directions at once.

With regard to claims 53, 66, and 96, Simon et al. fails to teach the step of altering a heading of the at least one passenger vehicle in response to information received by the receiver. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes the step of altering a heading of the at least one passenger vehicle in response to information received by the receiver because Examiner takes Official Notice that such an arrangement has been well known in the art. as a means for allowing the passenger vehicles to benefit from the invention.

With regard to claims 54, 55, 59, and 85, Simon et al. fails to teach the step of providing the information for access by a first or second passenger. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes the step of the step of providing the information for access by a first or second passenger because Examiner takes Official Notice that such an arrangement has been well known in the art. as a means for enabling passengers to benefit from the invention.

With regard to claims 63-65, 76-78, and 118-120, Simon et al. fails to teach that the information includes weather information, or traffic information, or information concerning the

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location or heading of the passenger vehicles. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the information includes weather information, or traffic information, or information concerning the location or heading of the passenger vehicles because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling users of the invention to benefit from such useful information.

With regard to claims 67 and 79-81, Simon et al. fails to teach an additional pathway station that assumes control of some of the passenger vehicles to prevent overloading of the pathway station. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes an additional pathway station that assumes control of some of the passenger vehicles to prevent overloading of the pathway station because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing the system to avoid overloading the pathway station.

With regard to claim 69, Simon et al. fails to teach that the first and second predetermined pathways are the same. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the first and second predetermined pathways are the same because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the invention to function when the pathways are the same.



With regard to claims 73 and 74, Simon et al. fails to teach that one pathway is disposed above the other. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that one pathway is disposed above the other because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the invention to function for the case in which one pathway is disposed above the other.

With regard to claims 75 and 117, Simon et al. fails to teach that the passenger vehicles are ground vehicles. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al so that the passenger vehicles are ground vehicles because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling ground vehicle to benefit from the invention.

With regard to claim 82, Simon et al. fails to teach that the passenger vehicles are marine vehicles. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the passenger vehicles are marine vehicles because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling marine vehicles to benefit from the invention.

With regard to claim 83, Simon et al. fails to teach that the third passenger vehicle is located on the first predetermined pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the third passenger vehicle is located on

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the first predetermined pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for extending the range of vehicles traversing that first pathway.

With regard to claims 88 and 115, Simon et al. fails to teach that one passenger vehicle is an aircraft, and another is a ground vehicle. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that one passenger vehicle is an aircraft, and another is a ground vehicle Examiner takes Official Notice that such an arrangement has been well known in the art as a means for enabling the invention to benefit both aircraft and ground vehicles.

With regard to claim 89, Simon et al. fails to teach that the first transceiver unit includes an omni-directional antenna that re-transmits the information signal to the receiver. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the first transceiver unit includes an omni-directional antenna that re-transmits the information signal to the receiver because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing the signal to be re-transmitted to any angle.

With regard to claim 91, Simon et al. fails to teach re-transmitting the information signal along a first pathway, wherein the first passenger vehicle is located on the first pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes the step of re-transmitting the information signal along a first pathway,

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wherein the first passenger vehicle is located on the first pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing the invention to work when the first passenger vehicle is located on the first pathway.

With regard to claim 95, Simon et al. fails to teach that the at least one additional transceiver is located on at least one corresponding passenger vehicle. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the at least one additional transceiver is located on at least one corresponding passenger vehicle because Examiner takes Official Notice that such an arrangement has been well known in the art. as a means for enabling the invention to work using multiple passenger vehicles.

With regard to claim 99, Simon et al. fails to teach that the additional transceiver is located on a fixed platform. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the additional transceiver is located on a fixed platform because Examiner takes Official Notice that such an arrangement has been well known in the art. as a means for enabling the system to function using already established fixed base stations.

With regard to claim 100, Simon et al. fails to teach that the at least one additional transceiver is located on a third passenger vehicle. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the at least one additional transceiver is located on a third passenger vehicle because Examiner takes Official Notice that such an

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arrangement has been well known in the art as a means for enabling the system to work using multiple passenger vehicles.

With regard to claim 101, Simon et al. fails to teach that the first and second passenger vehicles are located on a first pathway and are traveling in the same direction. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the first and second passenger vehicles are located on a first pathway and are traveling in the same direction because Examiner takes Official Notice that such an arrangement has been well known in the art. as a means for enabling the system to function when the passenger vehicles are traversing the same path.

With regard to claim 102, Simon et al. fails to teach that the information signal is digital. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the information signal is digital because Examiner takes Official Notice that such an arrangement has been well known in the art. as a means for enabling the invention to take advantage of the benefits of digital signals, such as improved noise immunity.

With regard to claim 104, Simon et al. fails to teach that the first and second passenger vehicles are located on a first pathway and are traveling in opposite directions. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the first and second passenger vehicles are located on a first pathway and are traveling in opposite directions because Examiner takes Official Notice that such an arrangement has been well

known in the art as a means for enabling the invention to serve passenger vehicles that are on the same pathway and traveling in opposite directions; such an arrangement would be particularly advantageous because it would help to prevent collisions.

With regard to claim 105, Simon et al. fails to teach that the first and second passenger vehicles are located on corresponding first and second predetermined pathways that intersect. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the first and second passenger vehicles are located on corresponding first and second predetermined pathways that intersect because Examiner takes Official Notice that such an arrangement has been well known in the art. as a means for enabling the invention to serve passenger vehicles that are on different, but intersecting, pathways; such an arrangement would be particularly advantageous because it would help to prevent collisions.

With regard to claim 106, Simon et al. fails to teach that at least one of the passenger vehicles is not located on a pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that at least one of the passenger vehicles is not located on a pathway because Examiner takes Official Notice that such an arrangement has been well known in the art. as a means for enabling the invention to serve passenger vehicles that are not located on a pathway.

With regard to claims 107 and 108, Simon et al. fails to teach that some of the passenger vehicles are located on a pathway and that the signal is transmitted along the pathway between the passenger vehicles, and that the invention comprises a pathway station that monitors the

passenger vehicles and signals transmitted along the pathway and that the invention comprises an additional pathway station for controlling some of the passenger vehicles to prevent overloading the system. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that some of the passenger vehicles are located on a pathway and so that the signal is transmitted along the pathway between the passenger vehicles, and so that the invention comprises a pathway station that monitors the passenger vehicles and signals transmitted along the pathway and so that the invention comprises an additional pathway station for controlling some of the passenger vehicles to prevent overloading the system because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing the invention to use centralized control.

With regard to claim 109, Simon et al. fails to teach a supplemental communication system to be used when there are an insufficient number of passenger vehicles. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes a supplemental communication system to be used when there are an insufficient number of passenger vehicles because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for making the system reliable.

With regard to claim 110, Simon et al. fails to teach that the first and third passenger vehicles are located on a pathway, and that the first transceiver includes a directional antenna that re-transmits the signal along the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill

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in the art to modify the invention of Simon et al. so that the first and third passenger vehicles are located on a pathway, and so that the first transceiver includes a directional antenna that re-transmits the signal along the pathway because Examiner takes Official Notice that such an arrangement has been well known in the art. as a means for enabling the signal to traverse the pathway.

With regard to claim 112, Simon et al. fails to teach that the third passenger vehicle is located on a pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the third passenger vehicle is located on a pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing the signal to traverse the pathway.

With regard to claim 113, Simon et al. teaches that the passenger vehicles are aircraft (aerodynes; abstract).

With regard to claim 114, Simon et al. fails to teach that the aircraft are located on pathways disposed above and below one another. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the aircraft are located on pathways disposed above and below one another because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing the invention to function as intended for passenger vehicles that do not happen to be traversing the same pathway.

With regard to claim 116, Simon et al. fails to teach that the at least one additional transceiver includes an omni-directional antenna that transmits the signal to the receiver.

Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the at least one additional transceiver includes an omni-directional antenna that transmits the signal to the receiver because Examiner takes Official Notice that such an arrangement has been well known in the art; an omni-direction antenna would enable the invention to reliably function as intended when all the passenger vehicles are traveling along different pathways.

With regard to claim 121, Simon et al. fails to teach a step of storing data when the at least one passenger vehicle becomes disconnected from the information network so that the information can be provided when the at least one passenger vehicle is reconnected to the information network. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes the step of storing data when the at least one passenger vehicle becomes disconnected from the information network so that the information can be provided when the at least one passenger vehicle is reconnected to the information network because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for helping prevent the loss of information that might otherwise occur from the disconnection.

With regard to claim 122, Simon et al. fails to teach transmitting the information signal at a first frequency, and wherein re-transmitting the information signal includes re-transmitting the information signal at a second frequency. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill



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in the art to modify the invention of Simon et al. so that it includes the step of transmitting the information signal at a first frequency, and wherein re-transmitting the information signal includes re-transmitting the information signal at a second frequency because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing the system to use frequency division multiplexing.

With regard to claim 123, Simon et al. fails to teach monitoring a position and a velocity of the passenger vehicles. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes monitoring a position and a velocity of the passenger vehicles because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for centralized control of the system.

With regard to claim 124, Simon et al. fails to teach transmitting information to the passenger vehicles from the pathway station; and transmitting information from the passenger vehicles to the pathway station. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes transmitting information to the passenger vehicles from the pathway station; and transmitting information from the passenger vehicles to the pathway station because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for centralized control.

With regard to claim 125, Simon et al. fails to teach that the pathway station is adapted to monitor a position and velocity of the passenger vehicles along the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been

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obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the pathway station is adapted to monitor a position and velocity of the passenger vehicles along the pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for centralized control.

With regard to claim 126, Simon et al. fails to teach that the pathway station is adapted to send signals to the passenger vehicles and to receive signals from the passenger vehicles.

Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the pathway station is adapted to send signals to the passenger vehicles and to receive signals from the passenger vehicles because Examiner takes Official Notice that such an arrangement has been well known in the art. as a means for allowing for centralized control.

With regard to claim 127, Simon et al. fails to teach that the pathway control station, the pathway station and the passenger vehicles form an information network, and wherein the pathway control station includes a storage medium to store data relating to one of the passenger vehicles when the one passenger vehicle becomes disconnected from the information network so that the information can be provided when the one passenger vehicle is reconnected to the information network. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the pathway control station, the pathway station and the passenger vehicles form an information network, and wherein the pathway control station includes a storage medium to store data relating to one of the passenger vehicles when the one passenger vehicle becomes disconnected from the information network so that the information

can be provided when the one passenger vehicle is reconnected to the information network because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for centralized control.

With regard to claim 128, Simon et al. fails to teach that the first transmitter/receiver unit is adapted to re-transmit the information signal at a first frequency, and wherein the additional transmitter/receiver unit is adapted to re-transmit the information signal at a second frequency. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the first transmitter/receiver unit is adapted to re-transmit the information signal at a first frequency, and wherein the additional transmitter/receiver unit is adapted to re-transmit the information signal at a second frequency because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing frequency division multiplexing to be used.

With regard to claim 129, Simon et al. fails to teach that the passenger vehicles form an information network, and further comprising a step of storing data when one passenger vehicle becomes disconnected from the information network so that the information can be provided when the one passenger vehicle is reconnected to the information network. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the passenger vehicles form an information network, and further comprising a step of storing data when one passenger vehicle becomes disconnected from the information network so that the information can be provided when the one passenger vehicle is reconnected to the information

network because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for helping prevent loss of information when such disconnection occurs.

With regard to claim 130, Simon et al. fails to teach transmitting the information signal at a first frequency, and wherein re-transmitting the information signal includes re-transmitting the information signal at a second frequency. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes transmitting the information signal at a first frequency, and wherein re-transmitting the information signal includes re-transmitting the information signal at a second frequency because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing frequency division multiplexing to be used.

With regard to claim 131, Simon et al. fails to teach monitoring a position and velocity of the passenger vehicles along the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes monitoring a position and velocity of the passenger vehicles along the pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for such an arrangement would allow for centralized control.

With regard to claim 132, Simon et al. fails to teach transmitting information to the passenger vehicles from the pathway station; and transmitting information from the passenger vehicles to the pathway station. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to

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modify the invention of Simon et al. so that it includes transmitting information to the passenger vehicles from the pathway station; and transmitting information from the passenger vehicles to the pathway station because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for centralized control.

With regard to claim 133, Simon et al. fails to teach re-transmitting the information signal in a first direction at a first frequency and re-transmitting the information signal in a second direction at a second frequency. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes re-transmitting the information signal in a first direction at a first frequency and re-transmitting the information signal in a second direction at a second frequency because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for the use of combined spatial and frequency diversity.

With regard to claim 134, Simon et al. fails to teach that the multibeam antenna is adapted to transmit the information signal in a first direction at a first frequency and to transmit the information signal in a second direction at a second frequency. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the multibeam antenna is adapted to transmit the information signal in a first direction at a first frequency and to transmit the information signal in a second direction at a second frequency because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for the use of combined spatial and frequency diversity.

With regard to claim 135, Simon et al. fails to teach that the pathway station is adapted to monitor a position and velocity of the passenger vehicles along the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the pathway station is adapted to monitor a position and velocity of the passenger vehicles along the pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for centralized control.

With regard to claim 136, Simon et al. fails to teach that the pathway station is adapted to send signals to the passenger vehicles and to receive signals from the passenger vehicles. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the pathway station is adapted to send signals to the passenger vehicles and to receive signals from the passenger vehicles because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for centralized control.

With regard to claim 137, Simon et al. fails to teach that the pathway control station, the pathway station and the passenger vehicles form an information network, and wherein the pathway control station includes a storage medium that stores data when one passenger vehicle becomes disconnected from the information network so that the information can be provided when the one passenger vehicle is reconnected to the information network. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the pathway control station, the pathway station and the passenger vehicles form an information

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network, and wherein the pathway control station includes a storage medium that stores data when one passenger vehicle becomes disconnected from the information network so that the information can be provided when the one passenger vehicle is reconnected to the information network because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for providing centralized control and fault tolerance.

With regard to claim 138, Simon et al. fails to teach that the passenger vehicles form an information network, and that the method further comprises a step of storing data when one passenger vehicle becomes disconnected from the information network so that the information can be provided when the one passenger vehicle is reconnected to the information network. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the passenger vehicles form an information network, and that the method further comprises a step of storing data when one passenger vehicle becomes disconnected from the information network so that the information can be provided when the one passenger vehicle is reconnected to the information network because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for providing fault tolerance, i.e., no information would be lost when such a disconnection occurs.

With regard to claim 139, Simon et al. fails to teach transmitting the information signal at a first frequency, and that re-transmitting the information signal includes re-transmitting the information signal at a second frequency. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes transmitting the information

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signal at a first frequency, and re-transmitting the information signal at a second frequency because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing frequency division multiplexing to be used.

With regard to claim 140, Simon et al. fails to teach that the step of re-transmitting the information signal in a plurality of directions includes re-transmitting the information signal in a first direction at a first frequency and re-transmitting the information signal in a second direction at a second frequency. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes the step of re-transmitting the information signal in a plurality of directions, which includes re-transmitting the information signal in a first direction at a first frequency and re-transmitting the information signal in a second direction at a second frequency because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for the use of a combination of spatial and frequency diversity.

With regard to claim 141, Simon et al. fails to teach that the step of monitoring the passenger vehicles includes monitoring a position and velocity of the passenger vehicles along the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the step of monitoring the passenger vehicles includes monitoring a position and velocity of the passenger vehicles along the pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for centralized control.



With regard to claim 142, Simon et al. fails to teach the steps of transmitting information to the passenger vehicles from the pathway station; and transmitting information from the passenger vehicles to the pathway station. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it includes the steps of transmitting information to the passenger vehicles from the pathway station; and transmitting information from the passenger vehicles to the pathway station because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for centralized control of the system.

With regard to claim 143, Simon et al. fails to teach that the first transmitter/receiver unit is adapted to re-transmit the information signal at a first frequency, and that the at least one additional transmitter/receiver unit is adapted to re-transmit the information signal at a second frequency. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the first transmitter/receiver unit is adapted to re-transmit the information signal at a first frequency, and that the at least one additional transmitter/receiver unit is adapted to re-transmit the information signal at a second frequency because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for frequency division multiplexing to be used.

With regard to claim 144, Simon et al. fails to teach that the pathway station is adapted to monitor a position and a velocity of the passenger vehicles along the pathway. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been

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obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the pathway station is adapted to monitor a position and a velocity of the passenger vehicles along the pathway because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for centralized control of the system.

With regard to claim 145, Simon et al. fails to teach that the pathway station is adapted to transmit signals to the passenger vehicles and to receive signals from the passenger vehicles. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the pathway station is adapted to transmit signals to the passenger vehicles and to receive signals from the passenger vehicles because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for centralized control of the system.

With regard to claim 146, Simon et al. fails to teach that the multibeam antenna transmits the information signal in a first direction at a first frequency and transmits the information signal in a second direction at a second frequency. Examiner takes Official Notice that such an arrangement has been well known in the art. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that the multibeam antenna transmits the information signal in a first direction at a first frequency and transmits the information signal in a second direction at a second frequency because Examiner takes Official Notice that such an arrangement has been well known in the art as a means for allowing for the use of combined frequency and spatial diversity.

11. Claims 1-3, 15, 30, and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robert et al.

With regard to claim 1, Robert et al. teaches a method of providing information to at least one passenger vehicle located on a pathway in an area where signal coverage is not available from an information source, to create an information network, the method comprising the steps of transmitting an information signal containing the information with a transmitter located at the information source; receiving the information signal with a first transmitter/receiver unit located on a passenger vehicle that is within a signal coverage area of the information source and that is located on the pathway; and re-transmitting the information signal with the first transmitter/receiver unit to a receiver located on the at least one passenger vehicle located on the pathway; wherein the information signal is transmitted from the first transmitter/receiver unit to the receiver along the pathway. (See abstract and column 4, line 34 to column 5, line 13.) Robert et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second

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portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle doesnot include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would have been obvious to one of ordinary skill in the art to modify the invention of Robert et al. so that it teaches altering one of a direction of travel and velocity of the second passenger vehicle in response to Robert fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle doe not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would

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information receiver by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger because such a system would be responsive to current conditions; fault tolerant; secure; and capable of serving several users simultaneously. Robert et al. fails to teach that the messages that are received and used by a passenger are also forwarded. It would have been obvious to one of ordinary skill in the art to modify the invention of Robert et al. so that the messages that are received and used by a passenger are also forwarded because such an arrangement would enable multiple parties to receive the message.

With regard to claim 2, Robert et al teaches a method of providing information from at least one passenger vehicle located on a pathway and not within a signal coverage area of a

destination, the method comprising steps of transmitting an information signal containing the information with a transmitter located on the at least one passenger vehicle on the pathway; receiving the information signal with a first transmitter/receiver unit located on a passenger vehicle, located on the pathway, that is within the signal coverage area of the destination; and re-transmitting the information signal with the first transmitter/receiver unit to a receiver located at the destination; wherein the information signal is transmitted from the transmitter to the first transmitter/receiver unit along the pathway. (See abstract and column 4, line 34 to column 5, line 13.) Simon et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would

have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it teaches altering one of a direction of travel and velocity of the second passenger vehicle in response to Simon et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would information receiver by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle

and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger because such a system would be responsive to current conditions; fault tolerant; secure; and capable of serving several users simultaneously.

With regard to claim 3, Robert et al. teaches repeating the steps of receiving and re-transmitting the information signal along the pathway with an additional transmitter/receiver unit to provide the information signal between the first transmitter/receiver unit and the at least one passenger vehicle. (See abstract and column 4, line 34 to column 5, line 13.)

With regard to claim 15, Robert et al. teaches a system that provides information to and from a second passenger vehicle which is in an area where signal coverage is otherwise not available from an information source, comprising a transmitter unit, located at the information source, that transmits the information signal; a first transmitter/receiver unit located on a first passenger vehicle that is located on a pathway within a signal coverage area of the information source, that receives the information signal and that re-transmits the information signal; a directional antenna, coupled to the transmitter/receiver unit that re-transmits the information



signal along the pathway; and a receiver, located on the second passenger vehicle that is located on the pathway, the receiver adapted to receive the information signal. (See abstract and column 4, line 34 to column 5, line 13.) Simon et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it teaches altering one of a direction of travel and velocity of the second passenger vehicle in response to Simon et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the

information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would information receiver by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information

signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger because such a system would be responsive to current conditions; fault tolerant; secure; and capable of serving several users simultaneously.

With regard to claim 30, A method of providing information to passenger vehicles, comprising steps of: transmitting an information signal containing the information from an information source to a first transmitter/receiver unit located on a first passenger vehicle located on a first predetermined pathway; receiving the information signal with the first transmitter/receiver unit; re-transmitting the information signal with the first transmitter/receiver unit; repeating the steps of receiving and re-transmitting the information signal with another transmitter/receiver unit located on a third passenger vehicle; and receiving the information signal with a receiver that is located on a second passenger vehicle located on a second predetermined pathway. (See abstract and column 4, line 34 to column 5, line 13.) Simon et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle

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and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would have been obvious to one of ordinary skill in the art to modify the invention of Simon et al. so that it teaches altering one of a direction of travel and velocity of the second passenger vehicle in response to Simon et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the

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first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would information receiver by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger because such a system would be responsive to current conditions; fault tolerant; secure; and capable of serving several users simultaneously.

With regard to claim 68, Robert et al. teaches a system that provides information to and from passenger vehicles, the system comprising a transmitter, located at an information source, that transmits an information signal including the information; a first transmitter/receiver unit

located on a first passenger vehicle located on a first predetermined pathway, the first transmitter/receiver unit being adapted to receive and retransmit the information signal; a second transmitter/receiver unit located on a second passenger vehicle, the second transmitter/receiver unit being adapted to receive and re-transmit the information signal; and a receiver that receives the information signal re-transmitted by the second transmitter/receiver unit, the receiver being located on a third passenger vehicle that is located on a second predetermined pathway. (See abstract and column 4, line 34 to column 5, line 13.) Simon et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would have been obvious to

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one of ordinary skill in the art to modify the invention of Simon et al. so that it teaches altering one of a direction of travel and velocity of the second passenger vehicle in response to Simon et al. fails to teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger. It would information receiver by the receiver; storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network; that the information signal is transmitted in a plurality of directions, at least one direction being along a pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle

and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information; wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information; that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger because such a system would be responsive to current conditions; fault tolerant; secure; and capable of serving several users simultaneously.

### **Response to Arguments:**

12. Applicant challenges the Official Notices taken in the final rejection. References that in combination support the Official Notices are Breed et al., Boles, Imai, and Osaki et al. Together, these references teach altering one of a direction of travel and velocity of the second passenger vehicle in response to information received by the receiver (collision avoidance; abstract of Breed et al.); storing data when the second passenger vehicle becomes disconnected from the information network so that the information can be provided when the second passenger vehicle is reconnected to the information network (abstract of Osaki et al.; abstract of Imai); that the information signal is transmitted in a plurality of directions, at least one direction being along a



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pathway; wherein the information signal includes a first portion of information intended for the passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the step of retransmitting the information signal with the first transceiver unit does not include retransmitting the first portion of information (abstract of Imai); wherein the information signal includes a first portion of information intended for the first passenger vehicle and a second portion of information intended for the second passenger vehicle and wherein the information signal retransmitted from the first passenger vehicle does not include the first portion of information (abstract of Imai); that the first passenger vehicle is coupled to the first transceiver unit, which receives the information signal from the first transceiver unit, and a second interface coupled to the receiver, which presents the information signal for access by a passenger (see Breed et al. and Boles; see, in particular, Breed et al. column 23, line 60 to column 24, line 13).

Applicant argues that an omni-directional antenna is not a directional antenna. But, according to the common definition, “omni-directional antenna” means an antenna having an essentially non-directional pattern in a given plane of the antenna and a directional pattern in any orthogonal plane (see, e.g. IEEE100: the Authoritative Dictionary of IEEE Standards Terms, Seventh Edition). Such an omni-directional antenna is therefore also a directional antenna.

## Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joe Logsdon whose telephone number is (703) 305-2419. The examiner can normally be reached on Monday through Friday from 10:00 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joe Logsdon

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Patent Examiner

Wednesday, October 06, 2004



HASSAN KIZOU  
SUPERVISORY PATENT EXAMINER  
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